



ACT 443 ProClick constant temperature controller

AFRISO Sp. z o.o.
Szałsza, ul. Kościelna 7
42-677 Czekanów
www.afriso.pl

Customer Service Team
tel. 32 330 33 55
fax 32 330 33 51
zok@afriso.pl

Art.-Nr 15 443 10

NOTICE

This instruction manual is also available on www.afriso.pl, in the "Online Catalogue" and "Downloads" tabs.

WARNING

The product may only be mounted, commissioned and disposed of by qualified, specially trained staff. Electrical work should always be entrusted to a qualified electrician.

Alterations performed by unauthorized staff may cause a threat and are forbidden for safety reasons.



The product is powered by 230 V AC. This may cause severe injuries or death.

Do not let the product go into contact with water.

Do not alter the product in any way.

Before mounting the product please read the manual of the mixing valve.

APPLICATION

Used in water based cooling and heating systems. Mounted directly on 3- and 4-way mixing valves. Maintains a constant temperature of the medium in the range of 10-90°C. Additionally, the product can also control a circulation pump.

SCOPE OF DELIVERY

1. ACT 443 ProClick constant temperature controller equipped with two temperature sensors with a pipe mounting adapter, a knob with a double-sided scale ("from 0 to 10" and "from 10 to 0"), as well as an electric cable with a plug and a circulation pump control cable.
2. Installation and usage manual.
3. Mixing valve mounting manual.

BUDOWA

ProClick system disconnecting pushbutton

Colour display

HELP button



Control buttons

Knob

Double-sided scale

Manual mode pushbutton

Fig. 1. Construction of the ACT ProClick constant temperature controller

MOUNTING AND USAGE

The controller can be mounted on the valve in four different positions (Fig. 2), the display will always automatically orient itself horizontally. The blue ring with indicator must point upwards. If it does not, pull off the knob and blue ring, then mount it back with the indicator pointing upwards.

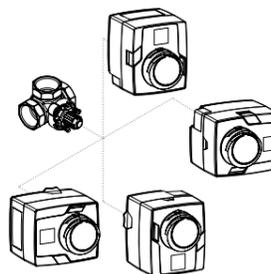


Fig. 2. Possible mounting positions

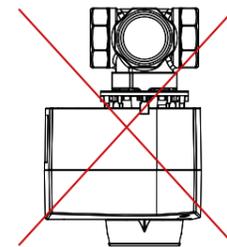


Fig. 3. Improper mounting position

Mounting/dismounting the controller on a mixing valve

To mount or dismount the controller, press and hold the ProClick system pushbutton (1), and then slide the actuator on or off the valve spindle.

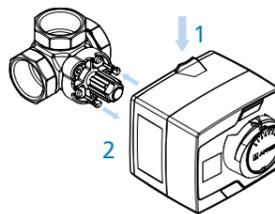


Fig. 4. Mounting/dismounting of an ACT ProClick controller on a valve

Mode of operation of the ACT constant temperature controller

Switching between automatic and manual mode can be done using the manual mode pushbutton.

When the pushbutton is in the upper position, the controller works automatically. When the pushbutton is pressed down, manual operation, meaning freely turning the knob of the controller, is enabled.



Fig. 5. Operation mode pushbutton

ELECTRICAL CONNECTIONS



Fig. 6. T1 and T2 sensor connection block

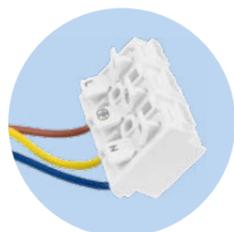


Fig. 7. Circulation pump connection block

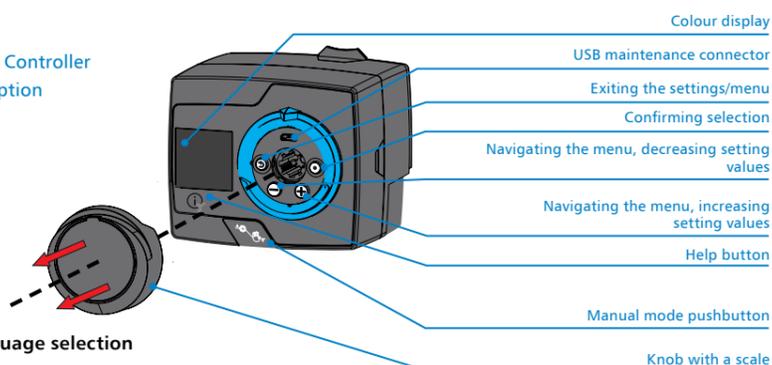
1. The T1 and T2 temperature sensors should be mounted in accordance with the chosen diagram (Fig. 9., Fig. 10., Fig. 11.) by using the adapters included, or specially prepared sleeves.
2. Then, connect the sensors to the included connection block in accordance with Fig. 6.
3. Connect the circulation pump to the proper controller connection block (Fig. 7.)
4. Connect power to the device using the power cable with a plug.

SETTINGS

1. Initiating the controller settings

Take off the knob (Fig. 8.) and then press and hold the and buttons for 5 seconds.

Fig. 8. Controller description



Colour display

USB maintenance connector

Exiting the settings/menu

Confirming selection

Navigating the menu, decreasing setting values

Navigating the menu, increasing setting values

Help button

Manual mode pushbutton

Knob with a scale

2. Language selection



Select the required language using the and buttons, confirm your choice with the button.

3. Diagram selection

Select the appropriate diagram in accordance with the mounting position of the mixing valve in the system. The available diagrams are: mixing valve mounted on the heat source return pipe (Fig. 9.), on the supply pipe (Fig. 10.), or on a 4-way valve (Fig. 11.).

4. Opening direction

After selecting the appropriate diagram, the next step is to select the direction of opening the valve. When the ACT 443 ProClick constant temperature controller is mounted on the supply pipe to maintain a constant temperature of the heating medium entering the system, the direction of operation of the controller should be chosen to ensure that rotating the valve sleeve in the chosen direction increases the flow of medium from the heat source into the system. The setting indicates controller operation to the right – clockwise. The setting indicates controller operation to the left – counter clockwise.

5. Temperature setting

In the next step, you have to select the minimum temperature (T_{min}) and the maximum temperature (T_{max}). Then, you need to select the mixed medium temperature you choose to maintain, between T_{min} and T_{max} . The icon indicates exiting the settings and returning to the starting screen.

6. Selecting the scale

In the last step, you need to select the right scale, either "0 to 10" or "10 to 0", corresponding to the chosen diagram (Fig. 9., Fig. 10., Fig. 11.). To change the scale, you need to lift up the plate, and put it on again facing the other side.

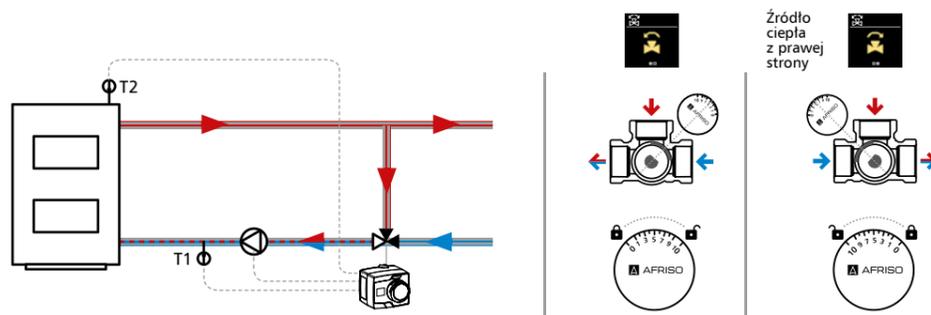


Fig. 9. Diagram with the mixing valve mounted on the return to the heat source, in order to protect the heat source against low-temperature corrosion.

The circulation pump will be switched on after the set heat source temperature (T_2) is exceeded. The default value is set at 50°C. This setting can be altered through the S3.2 parameter.

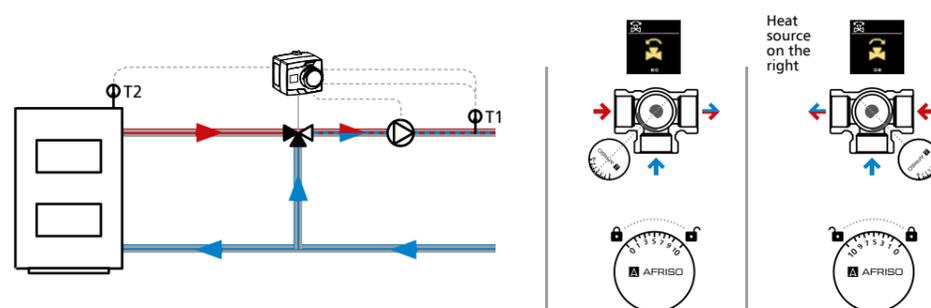


Fig. 10. Diagram with the mixing valve mounted on the supply pipe to maintain a constant temperature of the medium flowing to the system.

The required mixed temperature setting can be changed through pressing and holding both the and buttons for 1 second, without having to go through the whole menu.

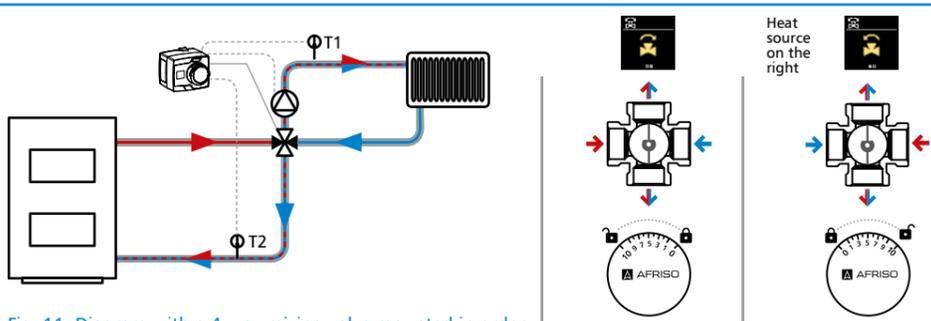
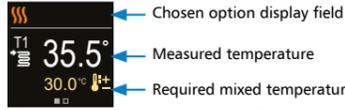


Fig. 11. Diagram with a 4-way mixing valve mounted in order to protect the heat source against low-temperature corrosion.

When selecting the diagram with the 4-way valve, the default minimum return temperature (T2) is 50°C. This setting can be altered through the S3.2 parameter. When this temperature is reached, the controller will turn on the circulation pump and start controlling the system supply temperature.

Icon description



- heating mode
- cooling mode
- valve turning to the left
- valve turning to the right
- return temperature sensor
- heat/cold source temperature
- circulation pump operation
- return temperature
- manual mode activated
- required mixed temperature
- sensor malfunction
- maximum temperature exceeded

Fig. 12. Description of the symbols displayed on the controller.

SETTING THE USER AND SERVICE PARAMETERS

SETTING THE REQUIRED TEMPERATURE

Supply - Supply temperature required.

SETTING THE OPERATION MODE

Operation - Turning the device off/on.

Heating / Cooling - Changing the operation mode from heating to cooling

Manual - Test mode.

INFORMATION OVERVIEW

About controller - Software version information.

Messages - Information about exceeding the max temperatures and activation of the return protection function.

Errors - A list of sensor errors.

Delete - Deleting messages and errors.

DISPLAY SETTINGS

Language - Language selection menu

Time and date - Time and date settings

Illumination - Display brightness (illumination) settings

CONTROLLER STATISTICS OVERVIEW

Graph - Graph showing the change of T1 and T2 temperatures over time, using data collected over the last 7 days.

Operation counter - Time since the product was last activated.

Change log - A log of changed parameters.

SETTING THE USER PARAMETERS

P1 General - Setting the temperature round up.

P2 Mixing circuit

P3 Energy source

SETTING THE SERVICE PARAMETERS

S1 General

S2 Mixing circuit - Service settings of the mixing circuit.

S3 Energy source - Service settings of the energy (heat) source.

FACTORY SETTINGS

Save settings

Load settings

Factory settings - Resetting to factory settings.

P1 General

Parameter	Function	Description	Range	Default setting
P1.1	Accuracy	Accuracy of the temperature indication (temperature round up)	- 0.1°C - 0.2°C - 0.5°C - 1°C	0.5°C
P1.2	Automatic shift of clock to summer / winter time	Automatic change to summer / winter time	- No - Yes	Yes
P1.3	Frequency of temperature measurements	Setting how often is temperature saved	1+30 min	5 min
P1.4	Tones	Setting the tones of the controller	- Off - Keypad - Errors - Keypad and errors	Keypad
P1.6	Sensitivity of "Help" key (%)	Setting the sensitivity of the "Help" key.	0+100%	40%

S1 General

Parameter	Function	Description	Range	Default setting
S1.1	Hydraulic scheme (diagram)	Selection of the hydraulic scheme (diagram)	1+3	2
S1.2	Code for unlocking the service settings	The ability to change service parameters.	0000+9999	0150
S1.3	Actuator opening direction	Setting the direction of rotation of the controller (opening the valve causes an increase of the medium temperature in a heating system, and a decrease in a cooling system)	- Left - Right	Left
S1.4	Antiblock function for mixing valve and pump	Setting the function preventing blocking of the valve and pump. If no activity of the valve or pump is detected in the time specified (week or day), the controller will activate the pump for 60 seconds and turn the valve.	- No - Yes, weekly - Yes, daily	Yes, weekly
S1.6	Setting heating / cooling operation	Using this settings, you can block the automatic switching between heating and cooling modes, limiting the controller's operation to purely heating or purely cooling.	- Heating and cooling - Heating only - Cooling only	Heating only
S1.17	Sensor T1 calibration	Adjustment of the displayed measured temperature for the T1 sensor.	-5+5°C	0°C
S1.18	Sensor T2 calibration	Adjustment of the displayed measured temperature for the T2 sensor.	-5+5°C	0°C

S2 Mixing circuit

Parameter	Function	Description	Range	Default setting
S2.1	Minimal setpoint temperature in heating mode (°C)	Setting the minimal setpoint temperature of the supply pipe if the "heating" mode of operation is selected. A mixed temperature lower than this parameter cannot be selected.	10+70°C	Diagram 1 - 45°C Diagram 2 - 25°C Diagram 3 - 25°C
S2.2	Maximal setpoint temperature in heating mode (°C)	Setting the maximal setpoint temperature of the supply pipe if the "heating" mode of operation is selected. A mixed temperature higher than this parameter cannot be selected.	15+90°C	Diagram 1 - 60°C Diagram 2 - 40°C Diagram 3 - 40°C
S2.3	Minimal setpoint temperature in cooling mode (°C)	Setting the minimal setpoint temperature of the supply pipe if the "cooling" mode of operation is selected. A mixed temperature lower than this parameter cannot be selected.	5+30°C	16°C
	Maximal setpoint temperature in cooling mode (°C)	Setting the maximal setpoint temperature of the supply pipe if the "cooling" mode of operation is selected. A mixed temperature higher than this parameter cannot be selected.	10+40°C	40°C

5 page 6 7 8

TECHNICAL PARAMETERS

Parameter / piece	Value / material
Torque	6 Nm
Temperature range	10+90°C
Rotation angle	90°
90° turning time	120 s
Power voltage	230 V AC
Ambient temperature range	10+50°C
Power consumption	max 3 W
Housing protection class	IP42
Dimensions (H x W x D)	85,5x97x94 mm
Weight	800 g
Mode of operation	Heating, cooling
Power cable length	2 m, with plug
Valve temperature probe cable length	1 m
Heat/cold source temperature probe cable length	3 m
Thermocouple dimensions	ø5 x 30 mm
Temperature sensor type	Pt1000
Circulation pump control cable length	0.5m, with a connection block
Circulation pump connector load capacity	max 1 A

DECLARATIONS AND STATEMENTS

AFRISO Sp. z o.o. hereby states that this product is compliant with the following directives:

- LVD (2014/35/EU) on low-voltage equipment,
- EMC (2014/30/EU) on electromagnetic compatibility,
- RoHS II (2011/65/EU) on restricting the use of hazardous substances in electrical and electronic equipment.
- And the REACH regulation on limitations of chemicals 1907/2006/UE.

The full text of the EU declaration of conformity can be found at the following websites: www.afriso.pl and www.afriso.com



MAINTENANCE

The ACT ProClick controller is a maintenance-free product.

DECOMMISSIONING, DISPOSAL

1. Disconnect the power supply.
2. Dismount the device.
3. To protect the environment, this product must not be disposed of together with regular household waste. Dispose of the product according to local directives and guidelines. This device consists of materials that can be reused by recycling companies.

WARRANTY

The manufacturer's warranty for this product is 36 months after the date of sale from AFRISO Sp. z o.o.. In case of any alteration of the product or usage against this instruction manual, the warranty becomes void.

CUSTOMER SATISFACTION

For AFRISO Sp. z o.o. customer satisfaction is the prime objective. Please contact us if you have any questions, suggestions or problems concerning our product: zok@afriiso.pl.

S2.7	Backlash of mixing valve (seconds)	Adjusting the valve opening time.	0+5 seconds	1 s
S2.8	Mixing valve P-constant	Adjusting the position of the mixing valve and the intensity of adjustment. A smaller value indicates a shorter valve rotation time, a higher value indicates a longer rotation time.	0,5+2,0	1
S2.9	Mixing valve I-constant	Adjusting the frequency of checking the mixing valve – how often is the valve position checked. A smaller value indicates a smaller frequency, a higher value indicates a higher frequency.	0,4+2,5	1
S2.10	Mixing valve D-constant	Adjusting the sensitivity of the mixing valve to supply pipe temperature changes. A lower value indicates lower sensitivity, a higher value indicates higher sensitivity.	0,4+2,5	1
S2.13	Boiler circulation pump – time of boiler temperature rise (seconds)	The controller will switch the pump on when the temperature measured at the heat source increases by 2°C in the set time interval.	30+900 seconds	300 s
S2.14	Boiler circulation pump – operation mode	Setting the circulation pump mode of operation: - Standard – the circulation pump operates in accordance with the minimal temperature set at S3.2 when the temperature difference between the T1 and T2 sensors has been exceeded. That difference can be changed in the S2.16 parameter. - Always – the pump is on whenever the T2 temperature is higher than the one set in the S3.2 parameter. When using a diagram with the 4-way mixing valve, the S2.14 parameter is disabled.	- Standard - Always	Standard
S2.15	Boiler circulation pump – switch-off delay (seconds)	Setting the delay of the pump deactivation when heating is no longer required.	30+900 seconds	300 s
S2.16	Boiler circulation pump – switch-off difference T2-T1 (°C)	Setting the difference between the T2 and T1 sensor temperatures that will cause the deactivation of the circulation pump.	2,0+8,0°C	3,0°C
S2.19	Initial valve movement from open position (seconds)	Setting the length of the first impulse during the move of the mixing valve from the open position.	0+30	20 s
S2.20	Initial valve movement from closed position (seconds)	Setting the length of the first impulse during the move of the mixing valve from the closed position.	0+30	20 s

S3 Energy source

Parameter	Function	Description	Range	Default setting
S3.1	System protection in heating mode – sensor T2	The protection mode is set in accordance with the T2 sensor reading. - None: The controller ignores the T2 reading. - Tmin: Only the minimum temperature (S3.2 parameter) is used. - Tmax: Only the maximum temperature (S3.3 parameter) is used. - Tmin and Tmax: Both maximum and minimum parameters (S3.2 and S3.3) are used.	- None - Tmin - Tmax - Tmin and Tmax	Tmin and Tmax
S3.2	Minimum temperature of T2 sensor in heating mode (°C)	If the measured T2 temperature is lower than the minimum set T2 temperature, the controller will shut off the circulation pump and close the mixing valve.	5+70°C	50°C
S3.3	Maximum temperature of T2 sensor in heating mode (°C)	If the measured T2 temperature is higher than the maximum set T2 temperature, then the upper value of the preferred temperature setting (S2.2 parameter) is used as the preferred T1 sensor temperature.	10+90°C	90°C
S3.4	System protection in cooling mode – sensor T2	The protection mode is set in accordance with the T2 sensor reading. - None: The controller ignores the T2 reading. - Tmin: Only the minimum temperature (S3.5 parameter) is used. - Tmax: Tmin: Only the maximum temperature (S3.6 parameter) is used. - Tmin and Tmax: Both maximum and minimum parameters (S3.5 and S3.6) are used.	- None - Tmin - Tmax - Tmin and Tmax	Tmin and Tmax
S3.5	Minimum temperature of T2 sensor in cooling mode (°C)	Minimum measured T2 temperature in cooling mode.	5+40°C	15°C
S3.6	Maximum temperature of T2 sensor in cooling mode (°C)	If the measured T2 temperature is higher than the maximum set T2 temperature, the controller will shut off the circulation pump and close the mixing valve.	10+45°C	30°C